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ABSTRACT

Information is the framework connecting technology, leadership, and the common work of education, namely, responsive situational decision making. Decisions are based upon some form of information perceived, taken in, and acted upon. The ways that administrators and teachers process information is the variable associated with effective educational leadership. Schools are effective to the extent that they provide access to information at the time and place it is needed. Psychologist Edwin Deming's premise that the quality of a product is directly influenced by the frequency of informed interaction between a caring worker and that product can be applied to education. Feedback about the effects of previous decisions is probably the most valuable information in educational decision-making. Isolated practitioners (one teacher in a classroom, one principal in a building, one superintendent in a district) have restricted access to such data for self-correction. Ways to help generate and gain access to these types of information are being explored to help individual decisionmakers generate learnings from their own experiences, to orient and align their decisions to those of others in the organization, to break down the invisible limits on what is perceived as acceptable and possible, and to facilitate self-correction. Technology can provide ways to make needed information more comprehensive and accessible. Practical non-futuristic methods are available to provide this access through telecommunications and computer technologies. (ALL)

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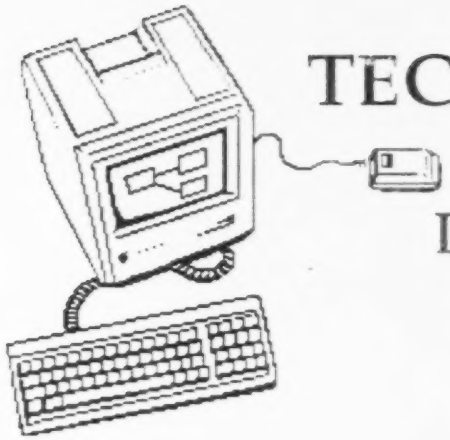


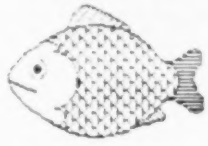
TECHNOLOGY as a Leadership Tool

Look Again at This Article's Title.

By Lewis A. Rhodes

Most of our generation lacks adequate experience to comprehend this concept immediately. "Tools" we don't usually associate with leaders but with workers; and "technology" — that's something that's provided for students to use.

This article suggests a common framework for connecting technology to leadership, and both of them to the work of education. The proposed framework? Information. Just as McLuhan's fish could not perceive water — their ubiquitous, invisible culture — so we are largely unaware of the medium in which we work, draw sustenance and "swim" through life — *information*. As living beings we are continuous information processors. Each decision and act we make is based upon some form of information that we have perceived, taken in, and chosen to act upon.



Within this information context then, the common work of education can be described as *decision-making*; and in particular, a special, dynamic and complex form called *situational* decision-making. For example, in controlled situations where most factors remain constant and can be anticipated, decision-making is relatively "simple" and rational. Complexity occurs when one must quickly respond to multiple, changing and often unanticipated conditions (as in the daily situations faced by school teachers and administrators). Here the nature of decision-making changes. There are no single "right" decisions, only "best" decisions for the situation — i.e., based on the information available at a given time and place.

The nature of the fundamental work of schooling is *responsive, situational decision-making*. This view is supported by research which suggests that effective teachers, principals and superintendents function much as do ships' captains — maintaining constant awareness for the unanticipated, monitoring their expectations for the unexpected, and making progress not by way of single big decisions, but by a series of smaller ones, each based on the results of previous decisions.

As with ships' captains, the success of effective school practitioners thus depends upon constant awareness and quickly accessible information — some stored in the form of experiences and procedures that have worked for them before, some in the form of information that will allow them to try new strategies (e.g., information about their own capabilities, or about the characteristics of the situation itself) and, of course, the most important — information about the direction or intentions of their efforts. The research of Manase, Berliner and others suggests that the ways that administrators and teachers process information continues to be the variable most associated with effective educational leadership.

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If the common work of education is decision-making, then we can consider the "workplace" of education as the *minds* of professional educators. In that case, schools may be effective to the extent that they provide that workplace with access to information, at the time and place it is needed, to make appropriate and responsive decisions.

Information, therefore, is a leader's most powerful resource. Management theorists tell us that the way to increase productivity is by working "smarter" rather than harder. What they fail to point out is that "working harder" is the result of a decision made by the individual worker; "working smarter" is more directly influenced by decisions made by managers and leaders which shape the work environment to provide workers with access to the information they need to make smarter decisions.

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Rhodes, continued

Possibly the best example of this (and one with direct implications for schools) is the "quality" revolution in Japan since WWII. Viewed from this article's information perspective, the success of Japanese industry can be attributed to their acceptance of the premise of American psychologist Edwin Deming that the quality of a "product" is directly influenced by the *frequency of informed interaction* between a caring worker and that product.

This appears to be a common sense observation in any profession — the more a sculptor interacts with clay, a factory worker with a car, a teacher with a child — the more opportunities there are to self-correct — to catch errors and make modifications. The Japanese, however, took this observation beyond common sense and turned it into a fundamental belief. Indeed, if this is, in fact, the way things are, then management has no choice; they must put something in the workers' environment that informs their decisions.

Deming helped the Japanese build in two such mechanisms. One, the Quality Circle, serves an information-generating and exchange function, allowing the decisions of the isolated individual worker to tap into the experiences and perspectives of others. The second, feedback data (sometimes called "statistical process controls" or "work measurement data"), provides individual workers with information about the effects of their actions while there is still time to do something about them. It is this self-corrective capability that makes it possible for Japanese industry to establish and maintain *zero defect* policies.

The Quality Circle serves an information-generating and exchange function

Contrast this approach to what, in the past, has been American industry's willingness to wait until the end of the assembly line to apply tests of quality when it is frequently too late or too expensive to correct. Fortunately in recent years American managers, too, have learned that information is their primary resource for "empowerment" — to be gathered, shared and made accessible to those closest to the "product" who must use it for their decisions. But what about education? Does this new "industrial" model have implication for schools? Were we to accept Deming's premise that the quality of a student's learning is strongly influenced by the frequency of informed interaction with a caring teacher, then what might we do to inform the decisions that underlie that interaction?

The truth is that we do not need technology in educational management

Answers to these questions may come from reflecting on what information affects our own decisions. What information orients, limits and nurtures them? For example, were we to look across a number of our conscious and unconscious decisions we would perceive a general direction. This orientation comes from a picture within our minds of what we are striving for. Within the framework of this vision, we derive our purposes, goals, missions, and objectives.

Some of the information we have, however, serves to limit our decisions. The culture or climate of a school or district tells us what is acceptable. Our own experiences, or experiences of peers, tell us what is possible.

Probably the most valuable information we have to inform our decisions is feedback about the effects of previous decisions. However, as isolated practitioners (one teacher to a classroom, one principal to a building, one superintendent to a district) few of us have had frequent enough access to this self-correcting data.

Fortunately, school leaders today are experimenting with ways to help practitioners generate and gain access to these types of information. These techniques take various forms. In current literature, they may be called "collegial planning," "reflective practice," "classroom coaching," "mentoring," "visioning," "strategic planning," "culture-building," etc. All are means to help individual decision-makers generate learnings from their own experiences; to orient and align their decisions to those of others in the organization; to break down the invisible limits on what is perceived as acceptable and possible; and to facilitate self-correction.

Up to this point we have been exploring the functions information serves in the "work" of schooling, and the responsibilities of school leaders to help create and provide it. However, this article is supposed to be about technology.

The truth is that we do not need technology in educational management. All we need is information to allow us to respond appropriately to ever-changing situations. Why, then, this emphasis on technology, and how can it function as a tool for educational leaders? Technology can provide us with ways to make the information we need more comprehensive and accessible for use in leadership situations.

TECHNOLOGY

The primary barrier to the recognition of this important role is that, in the immediate face-to-face environment of the single building, there are easier-to-implement alternatives. Our experience of schools consisting of "loosely-coupled," isolated practitioners having to rely on their own experiences and resources for their daily responsive interactions with children has led us to focus most current improvement efforts here. "Leadership," therefore, focuses on the principal who enhances individual teachers' decisions by providing frequent opportunities to check on purposes, to reflect and generate information with peers, and to get relatively immediate feedback.

There is nothing wrong with this building focus, but it is limited by two critical presuppositions. One is an assumption that practitioners have to operate in isolation today; the other is that for instructional leadership the building is "where it's at." Both are false.

Practical *non-futurist* technologies are available that can allow district leaders to fulfill their responsibilities to provide individual practitioners with access to experiences and expertise in other buildings, in the central office and in other districts. One-to-a-building or area specialists can problem-solve and get support from their peers. Decision-makers at all levels and roles can stay aware of the connectiveness of their responses as they deal with common conditions across a district.

Widely separated individuals can be linked to generate and exchange information as they make mutually supportive self-correcting decisions. For example:

- Reflective peer support groups have been created and maintained through regular conference telephone calls and/or computer conferencing.
- First-year superintendents across a state are being linked to an experienced mentor and to each other by a computer conference.
- Computer-accessed information bases have helped teachers, principals and district staffs store, organize and analyze results data to provide themselves with previously unattainable pictures of trends or gaps which could then be used for relatively immediate self-correction. In this way, test scores become data to be used to ensure success, rather than to be provided to others to measure.

District leaders increasingly are being called upon to be more than resource managers. They are challenged to be instructional leaders and "empowerments" of their staffs. Yet, as was noted in a recent U.S. Department of Education publication:

> "We do not know nearly enough about how and why school leadership affects the quality and quantity of...the basic work of schools: teaching and learning...The links between school leadership and the work of teaching and learning, for the most part, remain hidden in one of those black boxes that are ubiquitous in education...Moreover, whether the things that those in school leadership positions do to improve teaching and learning actually constitute leadership — as distinct from management — is still an open question."

The "question" has an answer. The link between leadership and the work of teaching and learning depends upon the management of one resource: information. But it is not that simple. The scope of the conditions educators must address today requires solutions that go beyond one or two effective schools or classrooms. School leaders are being called upon to restructure an entire system. In the context of this article, that means to change the patterns of relationships (in other words, the ways that information is exchanged) that connect the major decision-makers in the classroom, building and district office.

The link between leadership and the work of teaching depends upon the management of one resource

Effective leadership, therefore, requires the vision and capability to create solutions that match the scope of the problems — an ability to see the needed connections and to make them. Already available telecommunications and computer technologies can provide the capability...

- to align and connect education's "workplaces" (both psychological and physical);
- to generate and move information along these connections; and
- to break through the real and assumed walls that isolate education's decision-makers.

Today, these are the tools of leadership.

Lewis A. Rhodes is associate executive director for instructional leadership and technology with the American Association of School Administrators.

AASA/NSBA Presentation

Telecommunications on a Shoestring

by
Lewis Rhodes, Associate Executive Director
for Technology and Instruction,
American Association of School Administrators

For educators in the process of restructuring schools, information is a powerful. In his presentation, Lewis Rhodes, Associate Executive Director of Technology and Instruction at AASA discussed the benefits of technology in helping administrators pass on important information to teachers and administrators.

Rhodes refuted two presuppositions operating in education today. One is that teachers and principals, by the very nature of their jobs, must work in isolation. The second is that the burden of instructional leadership is primarily at the building level.

Technology, he said, has made information "more comprehensive and accessible." It is a way for one-to-a-building specialists to get support from their peers in other buildings or even in other districts. It allows educational leaders at all levels to make mutually supportive decisions.

"Telecommunications and computer technologies can provide the capability

- o to align and connect education's 'workplaces' (both psychological and physical);
- o to generate and move information along connections; and
- o to break through the real and assumed walls that isolate education's decision-makers."

All three of these functions, said Rhodes, are the role of leadership.